

# Fact Sheet



## For Final Significant Modification Permitting Action Under 45CSR30 and Title V of the Clean Air Act

This Fact Sheet serves to address the changes specific to this Significant Modification, and shall be considered a supplement to the Fact Sheet corresponding with the Title V operating permit issued on October 31, 2012.

Permit Number: **R30-02100001-2012**  
Application Received: **August 6, 2013**  
Plant Identification Number: **03-54-02100001**  
Permittee: **Columbia Gas Transmission, LLC**  
Facility Name: **Glenville Compressor Station**  
Mailing Address: **State Route 5, Truebada, WV 26351**

Permit Action Number: *SM01*      Revised: January 2, 2014

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Physical Location:	Truebada, Gilmer County, West Virginia
UTM Coordinates:	519.7 km Easting • 4,308.5 km Northing • Zone 17
Directions:	Traveling I-79 North, exit at Burnsville and turn left onto State Route 5. Proceed for approximately 12 miles to the station that is located on the left.

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### Facility Description

Glenville Compressor Station is a natural gas transmission facility covered by Standard Industrial Classification (SIC) Code 4922 and North American Industrial Classification System (NAICS) Code 486210. The station has the potential to operate seven (7) days per week, twenty-four (24) hours per day. The station consists of five (5) 2000-hp natural gas fired reciprocating engines and 2 mercaptan tanks. On-site emergency equipment includes a natural gas fired 530-hp electric generator.

This modification adds two (2) 7,943-hp (at 0° F) turbines; replaces the 530-hp emergency generator with a natural gas fired 1,063-hp emergency generator; adds a 1.1 MMBtu/hr natural gas fired heater (to preheat the natural gas just prior to being combusted in the turbine) and may add up to 40 catalytic (natural gas-fired) 0.072MMBtu/hr (each) heaters for indoor heating.

Reciprocating Engine 013G2 (Emission Point ID G2) shall be retired from service in 2014.

### Emissions Summary

Pollutant	Potential emissions before modification (TPY)	Increase in potential emissions (TPY)	Potential emissions after modification (TPY)
Carbon Monoxide (CO)	205.06	66.07	271.12
Nitrogen Oxides (NO <sub>x</sub> )	1,196.32	38.45	1,234.78
Particulate Matter (PM <sub>10</sub> )	17.79	4.07	21.86
Total Particulate Matter (TSP)	17.79	4.07	21.86
Sulfur Dioxide (SO <sub>2</sub> )	0.26	0.44	0.70
Volatile Organic Compounds (VOC)	60.21	5.44	65.65
CO <sub>2</sub> e	43,168	71,948	115,116
Formaldehyde	20.33	0.52	20.85
Other HAPs	8.97	0.25	9.22
Total HAPs	29.30	0.77	30.07

### Title V Program Applicability Basis

With the proposed changes associated with this modification, this facility maintains the potential to emit 1,234.78 tons/yr of NO<sub>x</sub>, 271.12 tons/yr of CO, 20.85 tons/yr of Formaldehyde and 30.07 tons/yr of total HAPs. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, over 10 tons per year of an individual HAP and over 25 tons per year of total HAPs, Columbia Gas Transmission, LLC is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

### Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

The modification to this facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR2	Indirect Heat Exchangers
	45CSR13	Construction Permit
	45CSR16	NSPS
	45CSR30	Operating permit requirement.
	45CSR34	MACT
	40 C.F.R. 60 Subpart JJJJ	Spark Ignition Internal Combustion Engines
		NSPS
	40 C.F.R. 60 Subpart KKKK	Turbine NSPS
	40 C.F.R. 63 Subpart YYYY	Turbine MACT
	40 C.F.R. 63 Subpart DDDDD	Boiler MACT
	40 C.F.R. 63 Subpart ZZZZ	RICE MACT
State Only:	None	

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

### Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit ( <i>if any</i> )
R13-3110	November 6, 2013	N/A

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table," which may be downloaded from DAQ's website.

### Determinations and Justifications

Below is a discussion of applicable rules:

1. 40 C.F.R. Part 60 Subpart KKKK: U.S. EPA has promulgated NSPS for stationary combustion turbines constructed, modified, or reconstructed after February 18, 2005, in Subpart KKKK. Subpart KKKK applies to combustion turbines with a peak heat input of 10 MMBtu/hr and greater. The proposed Solar Taurus turbines are rated at 71.3 MMBtu/hr (at 0<sup>0</sup> F). Therefore, the proposed turbines are affected sources under this subpart. Turbines 013T1 and 013T2 are subject to the following sections of 40 C.F.R. Part 60 Subpart KKKK:

Emission Limitations: This subpart establishes emissions standards for NO<sub>x</sub> and SO<sub>2</sub>.

According to 40 C.F.R. §60.4330(a)(2), these turbines are limited to 0.060 lb of SO<sub>2</sub> per MMBtu of heat input. These turbines will be burning pipeline quality natural gas with a maximum sulfur content of 20 grains per 100 standard cubic feet of gas. Under 40 C.F.R. §60.4365, a source is exempt from monitoring fuel sulfur content if the source burns natural gas that is covered by a transportation agreement (Federal Energy Regulatory Commission tariff limit) with a maximum of 20 grains of sulfur per 100 standard cubic feet of gas (40 C.F.R. §60.4365(a)).

40 C.F.R. §60.4320 establishes NO<sub>x</sub> standards for affected units as specified in Table 1 of 40 C.F.R. 60 Subpart KKKK. The proposed units are new turbines firing natural gas with a heat input of greater than 50 MMBtu/hr and less than 850 MMBtu/hr. In this subcategory, these turbines are limited to a NO<sub>x</sub> standard of 25 ppm at 15 percent oxygen (O<sub>2</sub>) content or 150 nanogram /Joule of useful output. There are alternative standards for units operating at less than 75 percent of peak load or when operating at temperatures less than 0<sup>0</sup> F. The alternative limit is 150 ppm at 15% O<sub>2</sub> as listed in Table 1 to 40 C.F.R. 60 Subpart KKKK.

This subpart requires sources to use one of two options in monitoring compliance with the NO<sub>x</sub> standard, which are testing and a continuous monitoring system. Sources can conduct testing every year and reduce the subsequent testing to every two years if the NO<sub>x</sub> results are equal to or less than 75% of the NO<sub>x</sub> emission limits. The applicant has elected to use the testing option at this time.

Following are the requirements for the turbines:

Emission Limits for NO<sub>x</sub>: 40 C.F.R. §60.4320(a).

Emission Limits for SO<sub>2</sub>: 40 C.F.R. §60.4330(a)(2).

General requirements: 40 C.F.R. §60.4333(a).

Continuous Compliance for NO<sub>x</sub>: 40 C.F.R. §60.4340(a).

Exemption from monitoring the total sulfur content of the fuel: 40 C.F.R. §60.4365(a).

Reports: 40 C.F.R. §60.4375(b). According to 40 C.F.R. §60.4375(b), sources electing to conduct testing are only required to submit test reports of the results in lieu of submitting excess emissions and monitor downtime reports in accordance with 40 C.F.R. §60.7(c).

Initial and subsequent performance tests regarding NO<sub>x</sub>: 40 C.F.R. §60.4400.

Table 1 to 40 C.F.R. 60 Subpart KKKK

2. 40 C.F.R. Part 60 Subpart JJJJ: Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines) applies to stationary spark ignition engines manufactured after July 1, 2007. The replacement generator set 013G3 will be equipped with a spark ignition engine manufactured after July 1, 2007. Thus, the engine would be subject to the standards of this subpart (Section 40 C.F.R. §60.4233(e)) and subject to the emission limitations of Table 1 to 40 C.F.R. 60 Subpart JJJJ, which include the following requirements for an emergency engine greater than 130 HP.

- For NO<sub>x</sub>, the limit is 2.0 grams per horsepower-hour (g/hp-hr) or 160 ppmvd at 15 % O<sub>2</sub>.
- For CO, the limit is 4.0 g/hp-hr or 540 ppmvd at 15 % O<sub>2</sub>.
- For VOC, the limit is 1.0 g/hp-hr or 86 ppmvd at 15 % O<sub>2</sub>.

The proposed engine for the generator set is manufactured by Dresser Waukesha. The manufacturer claims that the NO<sub>x</sub> rate is predicted at 2 g/hp-hr; CO is 1.30 g/hp-hr; and VOC (Non-Methane Hydrocarbon) is 0.26 g/hp-hr. According to the manufacturer's data, this engine should be capable of meeting the emission standards of this subpart. However, the manufacturer did not certify the engine as specified under 40 CFR Part 90, 40 CFR Part 1048 or 40 CFR Part 1054. Therefore, R13-3110 requires the applicant to conduct an initial performance test and either conduct subsequent performance testing every 8,760 hours of operation or once every 3 years, whichever is sooner.

Following are the requirements for the emergency generator:

Emission Standards: 40 C.F.R. §60.4233(e)

How long must I meet the emission standards: 40 C.F.R. §60.4234

Monitoring Requirements: 40 C.F.R. §60.4237(a)

Compliance Requirements: 40 C.F.R. §§60.4243(b)(2)(ii), 60.4243(d)

Test methods and Procedures: 40 C.F.R. §60.4244, Table 2 to 40 C.F.R. 60 Subpart JJJJ, 40 C.F.R. §60.8(a).

Recordkeeping: 40 C.F.R. §§60.4245(a), (b) & (c).

General Provisions: 40 C.F.R. §60.4246(a).

Tables 1 & 3 to 40 C.F.R. 60 Subpart JJJJ.

3. 40 C.F.R. Part 63 Subpart YYYY:

The proposed turbines are classified as affected sources under the NESHAP for stationary combustion turbines promulgated under 40 C.F.R. 63 Subpart YYYY. These proposed turbines are classified as new lean premix gas-fired turbines. Per 40 C.F.R. §63.6095(d), U.S. EPA stayed the standards for a new or reconstructed stationary turbine that is either a lean premix gas-fired or diffusion flame gas-fired stationary combustion turbine. The only requirement that the applicant must comply with under this subpart is the initial notification requirements in 40 C.F.R. §63.6145(c) (this notification is complied with by section 4.5.1 of R13-3110) until U.S. EPA takes final action to require compliance with the standards under the subpart. The Initial Notification requirements have been satisfied through R13-3110 permit application submission (See 40 C.F.R. §63.5(d)(1)).

4. 40 C.F.R. Part 63 Subpart ZZZZ:

The internal combustion engine for the emergency generator set is classified as an affected source under the NESHAP for Stationary Reciprocating Internal Combustion Engines (40 C.F.R. 63 Subpart ZZZZ). The proposed engine will have a power output rating of 1,063 bhp and be operated as an emergency engine. Columbia Gas does not intend to operate the generator for more than 15 hours per calendar year for emergency demand response as defined in 40 C.F.R. §§63.6640(f)(2)(ii) and (iii). An emergency demand response is determined and declared by the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3 or other authorized entity as determined by the Reliability Coordinator. According to 40 C.F.R. §§63.6590(b) and (b)(1), the proposed engine is not required to meet the requirements of 40 C.F.R. 63 Subpart ZZZZ and the general requirements of 40 C.F.R. Part 63 except for the initial notification requirements, which the applicant has satisfied through submission of the R13-3110 permit application.

Following are the requirements for the emergency generator:

What parts of my plant does this subpart cover?: 40 C.F.R. §63.6590(b)(1)(i).

Continuous Compliance: 40 C.F.R. §63.6640(f).

Reporting: 40 C.F.R. §63.6645(f)

5. 40 C.F.R. Part 63 Subpart DDDDD:

The proposed heater is classified as a process heater under the NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 C.F.R. 63 Subpart DDDDD) and therefore is an affected source under the subpart. The heater is designed to burn natural gas (Gas 1 Unit) and will have a heat input rating of 1.1 MMBtu/hr. These key features (natural gas and less than 5 MMBtu/hr heat input) makes this heater only subject to the work practice requirements of this subpart. The applicant will be required to conduct tune-up to the heater once every five years. These requirements and the corresponding reporting were incorporated in R13-3110.

Following are the requirements for the process heater:

Compliance Date: 40 C.F.R. §63.7495.

General Requirements: 40 C.F.R. §63.7505(a).

Initial Compliance Requirements: 40 C.F.R. §63.7510(g).

Subsequent Compliance Requirements: 40 C.F.R. §63.7515(d).

Initial compliance: 40 C.F.R. §63.7530(d).

Continuous compliance: 40 C.F.R. §§63.7540(a)(12), (a)(10)(vi).

Notifications: 40 C.F.R. §§63.7545(c), (e).

Reports: 40 C.F.R. §§63.7550(a)-(c).

Records: 40 C.F.R. §63.7555.

In what form and how long to keep the records: 40 C.F.R. §63.7560.

General Provisions: 40 C.F.R. §63.7565.

Tables 3,9 & 10 of 40 C.F.R. 63 Subpart DDDDD.

6. 45CSR2: The proposed heater is subject to 45CSR§2-3. According to 45CSR§2-11.1, the heater is exempt from 45CSR§§2-4,5,6,8 & 9 because the heater design capacity is 1.1 MMBtu/hr.

### **Non-Applicability Determinations**

The following requirements have been determined not to be applicable to the subject facility due to the following:

1. 40 C.F.R. Part 60 Subpart Dc - The fuel pre heater is rated for 1.1 MMBtu/hr. The definition of affected source in Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units) is units between 10 MMBtu/hr and up to 100 MMBtu/hr. Thus, the proposed fuel preheater is not an affected source and is not subject to the standards under Subpart Dc.
2. 40 C.F.R. Part 60 Subpart OOOO - Turbines are driving compressors at a transmission station for a natural gas pipeline system. Subpart OOOO (Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution) establishes standards for certain process equipment at oil and natural gas production sites. Affected sources include compressors located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. The Glenville Compressor station is downstream of the custody transfer point of Columbia's transmission system. Therefore, the proposed compressors are not affected sources and not subject to the performance standards of Subpart OOOO.
3. 45CSR10 – According to 45CSR§10-10.1, the heater is exempt from 45CSR§§10-3, 6,7 & 8. The heater is also exempt from 45CSR§§10-4 and 5, because the facility is not a manufacturing process source operation and does not involve combustion of refinery or process gas streams.

The director has determined that 45CSR10 does not apply to engines and turbines; the engines and turbines do not meet the definition of a fuel burning unit in 45CSR§10-2.8 or a manufacturing process in 45CSR§2-2.11.

4. 40 CFR 64 – Proposed emission sources being added to the facility do not have add-on controls; therefore, in accordance with 40 C.F.R § 64.2(a), CAM is not applicable to this facility.
5. There are no Greenhouse Gas Clean Air Act requirements for this facility because the facility has not made any changes that triggered a PSD permit modification.
6. According to 45CSR§30-3.2.d.2, the 40 proposed catalytic (natural gas-fired) 0.072MMBtu/hr (each) heaters for indoor heating are deemed insignificant. R13-3110 does not have any emission limits or any requirements for these heaters.

## **Request for Variances or Alternatives**

None

## **Insignificant Activities**

Insignificant emission unit(s) and activities are identified in the Title V application.

## **Comment Period**

Beginning Date: November 14, 2013

Ending Date: December 16, 2013

## **Point of Contact**

All written comments should be addressed to the following individual and office:

U.K.Bachhawat  
West Virginia Department of Environmental Protection  
Division of Air Quality  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304  
Phone: 304/926-0499 ext. 1256 • Fax: 304/926-0478  
Udyot.k.bachhawat@wv.gov

## **Procedure for Requesting Public Hearing**

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

## **Response to Comments (Statement of Basis)**

There were a few comments by the permittee according to December 4 and November 22 e-mails. The comments did not result in any changes to the permit. The comments resulted in the following minor changes in the fact sheet:

Turbine hp was changed from 7,000 hp to 7,943 hp (at 0°F) to match the permitted hp.

PTE was changed to match the permit application.

A few changes to 40 C.F.R. Part 60 Subpart KKKK discussion.

A change to 40 C.F.R. Part 63 Subpart DDDDD discussion to remove the monthly fuel monitoring for the heater, which is not a requirement in the R13-3110 permit.